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PCT
02 MAR 2000

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

09/486763

INTERNATIONAL APPLICATION NO.

PCT/EP98/04700

INTERNATIONAL FILING DATE

27. July 1998 (27.07.98)

PRIORITY DATE CLAIMED

15. October 1997 (15.10.97)

TITLE OF INVENTION DATA TRANSMISSION SYSTEM BASED ON COMBINED SHORTWAVE-SATELLITE
TRANSMISSION

APPLICANT(S) FOR DO/EO/US

Thomas KNEIDEL

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. ☒ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☒ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☐ have not been made and will not be made.
8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☒ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 16. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☐ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☒ Other items or information:

PCT/IPEA/416, DATED: 07. DECEMBER 1999

09/486763

17. ☒ The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$970.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO. \$840.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$760.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$670.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$96.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

CALCULATIONS PTO USE ONLY

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\$ 840.00

Surcharge of \$130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).

\$

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE
Total claims	1 - 20 =	0	X \$18.00
Independent claims	0 - 3 =	0	X \$78.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$260.00

\$ 0

\$ 0

\$ 0

TOTAL OF ABOVE CALCULATIONS =

\$ 840.00

Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).

\$

SUBTOTAL =

\$ 840.00

Processing fee of \$130.00 for furnishing the English translation later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(f)).

\$

TOTAL NATIONAL FEE =

\$ 840.00

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property

\$

40.00

TOTAL FEES ENCLOSED =

\$ 880.00

Amount to be:
refunded
charged

\$
\$

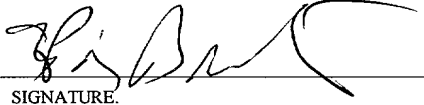
a. ☒ A check in the amount of \$ 880.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 07-2153. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

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SIGNATURE

Mar. 2, 2000
NAME

25,666

REGISTRATION NUMBER

1/12/01

ENGLISH TRANSLATION OF
APPLICATION

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09/486763

02 MAR 2000

Data Transmission System Based on Combined Shortwave-Satellite Transmission

This invention relates to a system for transmitting information to a user via a wideband satellite transmission channel in broadcast operation.

5 A system of this type is known (Connect magazine, July 1997, p. 74). With this system, information, from the Internet for example, can be transmitted to users very rapidly at high transmission rates. The transmission takes place via television satellites (transponders). A request for desired information by the user takes place as usual via a telephone line.

10 Many users cannot use telephone lines for making the request, for example when the user is on a ship or is using an aircraft, or also is so far from telephone networks that even UHF or VHF communications systems such as mobile telephony devices cannot be utilized.

It is an object of this invention to provide reception of Internet information via a satellite transmission channel in broadcast operation even for those users who have no opportunity for such a connection to the Internet by line for example, and those who have only limited opportunities of shortwave communication available to them.

15 This object is achieved according to principles of the invention in that users are connected to the Internet via a shortwave radio path on which data are transmitted according to the known TCP/IP protocol.

20 The invention takes advantage of the knowledge that such shortwave radio paths in a range of, for example, 1.5 to 30 MHZ can be used over vast distances on the entire globe. Such shortwave radio connections, in contrast to wire telephone lines or mobile telephony connections working in the VHF/UHF frequency range, are often unstable, provide very low transfer rates (< 3 Kbit/s) and are most commonly operated in simplex mode. Use of the internationally standardized TCP/IP protocol currently used for data transmission in worldwide communications networks, such as the Internet, which operates in full duplex mode and, as is described for
25 example in the book "Internetworking With TCP/IP" by Douglas E. Comer, Prentice Hall,

Englewood Cliffs, New Jersey 07632, has so far been withheld from the shortwave transmission medium. For the purpose of this invention, this TCP/IP protocol is modified and adapted so that it can also be used for the chronologically sequential alternating, forward and backward connection, common in the shortwave range. Such a shortwave connection transmitting data according to the TCP/IP protocol is therefore also suitable for requesting data on the Internet. An Internet user on a ship who has a shortwave transmitter/receiver device with these properties can, therefore, at any time, for example from an Internet provider, request a specific Internet content via his shortwave connection, and this will then be directly transmitted to him via a wideband satellite transmission channel. Although such shortwave radio connections are relatively narrowband, the opportunity is hereby provided for the first time for even users who do not have any opportunity for a wire connection to an Internet service provider to make use of the possibility of an Internet information transmission with high transfer rates via a satellite transmission channel.

The invention is described in further detail below with reference to a schematic drawing, based on an exemplary embodiment.

The figure shows an Internet service provider 1 that makes available content from the Internet 2 via a satellite transmission path 3, 4, 5 to various users A and B, at a high transmission rate. A suitable decoder 7 is provided in a computer 6 of each user. The data transmission via the satellite transmission path takes place according to the TCP/IP protocol.

At each user station A and B, a shortwave transmitter/receiver 8 is provided that is connected with a shortwave transmitter/receiver station 9 of a base station Z having Internet access. Suitable shortwave devices 8 and 9 are the XK2000 devices of Rohde & Schwarz, as described, for example, in the data sheet "HF Transceiver Family XK2000". The computers 6 and 10 that control the devices 8 and 9 provide a control program that corresponds to the TCP/IP protocol and is adapted only to the special requirements of a shortwave connection. Thus, the shortwave connection between the devices 8 and 9 functions, exactly as does the satellite transmission path, according to the TCP/IP protocol, and is thus directly suitable for access from stations A and B to the Internet 2, via Z.

Rather than transmitting large quantities of data over the base station Z via shortwave to the user station A and/or B , this information can be deposited for the user in a so-called mailbox on the Internet. The user stations A and/or B can load this data to their computers via the rapid satellite connection. Both notification of the user stations A and/or B of the deposited message and request for the deposited information on the Internet take place via the shortwave medium.

5

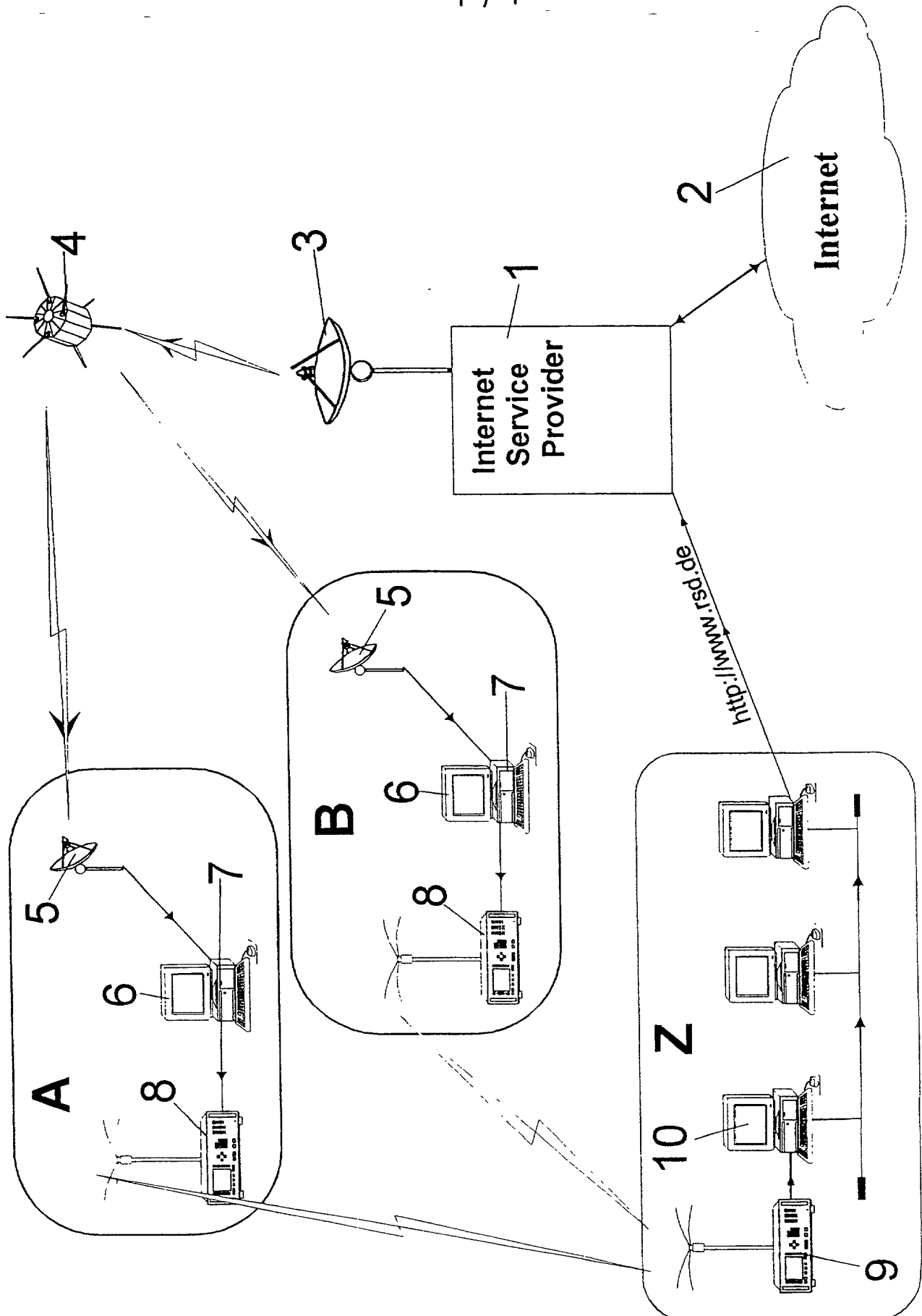
AKT 31

PCT/EP98/04700
ROHDE & SCHWARZ GMBH & CO. KG

New Claim

1. System for the transmission of Internet-Information to computer (6) requesting users (A, B) via a wide-band satellite transmission channel (3,4,5),
characterized in that,
in order to request information, the users are connected with a base station (Z) which is connected to the internet via a data transmitting short-wave electromagnetic path (8,9) according to the TCP/IP-Protocol, that the requested information for the user (A, B) is placed in a mail box in the internet (2),
that the user (A, B) is informed of the thusly placed information via the short-wave electromagnetic path (8,9), and
that the user (A, B) can load the thusly placed information in his computer (6) via the wide-band satellite transmission channel (3, 4, 5)

[illegible][illegible]



**Declaration and Power of Attorney For Patent Application
(or PCT) Erklärung Für Patentanmeldungen Mit Vollmacht**

Atty.Dkt.No.: C-3717

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

dass mein Wohnsitz, meine Postanschrift, und meine Staatsangehörigkeit den im Nachstehenden nach meinem Namen aufgeführten Angaben entsprechen,

dass ich, nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent beantragt wird für die Erfindung mit dem Titel:

(1) DATA TRANSMISSION SYSTEM BASED ON

COMBINED SHORTWAVE-SATELLITE TRANSMISSION

deren Beschreibung hier beigefügt ist außer das folgende Feld ist angekreuzt:
(zutreffendes ankreuzen)

☒ (2) vorhergehend eingereicht

☒ (3) am 27 JUL 1998 unter der

☐ (4) U.S. Anmeldungsseriennummer _____

der PCT International No. PCT/EP98/04700

und ☐ (5) wurde am _____
abgeändert (falls tatsächlich abgeändert).

Ich bestätige hiermit, dass ich Inhalt der obigen Patentanmeldung einschließlich der Ansprüche durchgesehen und verstanden habe, die eventuell durch einen Zusatzantrag wie oben erwähnt abgeändert wurde.

Ich erkenne meine Pflicht zur Offenbarung irgendwelcher Informationen, die für die Prüfung der vorliegenden Anmeldung in Einklang mit Absatz 37, Bundesgesetzbuch, Paragraph 1.56 von Wichtigkeit sind, an.

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Abschnitt 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119 aller unten angegebenen Auslandsanmeldungen für ein Patent oder eine Erfinderurkunde nachstehend gekennzeichnet, die ein Anmeldedatum haben, das vor dem Anmeldedatum der Anmeldung liegt, für die Priorität beansprucht wird.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

(1)

the specification of which is attached hereto unless the following box is checked:
(check appropriate blocks)

☐ (2) was filed _____

☐ (3) on _____ as

☐ (4) U.S. Appln. S. N. _____

or PCT International No. _____

☐ (5) as amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

German Language Declaration

Prior foreign applications / Priorität beansprucht

(6) 197 45 573.5 (Number) (Nummer)	GERMANY (Country) (Land)	15/OCT/1997 (Day/Month/year Filed) (Tag/Monat/Jahr eingereicht)	[X] Yes Ja	[] No Nein
(6) (Number) (Nummer)	(Country) (Land)	(Day/Month/year Filed) (Tag/Monat/Jahr eingereicht)	[] Yes Ja	[] No Nein
(6) (Number) (Nummer)	(Country) (Land)	(Day/Month/year Filed) (Tag/Monat/Jahr eingereicht)	[] Yes Ja	[] No Nein

Ich beanspruche hiermit gemäß Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 119(e), den Vorzug aller unten aufgeführten vorläufigen Anmeldungen.

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below.

(7) (Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)
--	---------------------------------

(7) (Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)
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Ich beanspruche hiermit gemäß Absatz 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 120, den Vorzug aller unten aufgeführten Anmeldungen und falls der Gegenstand aus jedem Anspruch dieser Anmeldung nicht in einer früheren amerikanischen Patentanmeldung laut dem ersten Paragraphen des Absatzes 35 der Zivilprozessordnung der Vereinigten Staaten, Paragraph 112 offenbart ist, erkenne ich gemäß Absatz 37, Bundesgesetzbuch, Paragraph 1.56 meine Pflicht zur Offenbarung von Informationen an, die zwischen dem Anmeldedatum der früheren Anmeldung und dem nationalen oder PCT internationalen Anmeldedatum dieser Anmeldung bekannt geworden sind.

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(8) (Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)
(8) (Application Serial No.) (Anmeldeseriennummer)	(Filing Date) (Anmeldedatum)	(Status) (patentiert, anhängig, aufgegeben)	(Status) (patented, pending, abandoned)

Ich erkläre hiermit, daß alle von mir in der vorliegenden Erklärung gemachten Angaben nach meinem besten Wissen und Gewissen der vollen Wahrheit entsprechen, und daß ich diese eidesstattliche Erklärung in Kenntnis dessen abgebe, daß wissentlich und vorsätzlich falsche Angaben gemäß Paragraph 1001, Absatz 18 der Zivilprozessordnung der Vereinigten Staaten von Amerika mit Geldstrafe belegt und/oder Gefängnis bestraft werden können, und daß derartig wissentlich und vorsätzlich falsche Angaben die Gültigkeit der vorliegenden Patentanmeldung oder eines darauf erteilten Patents gefährden werden.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLLMACHT: Als benannter Erfinder beauftrage ich hiermit den Patentanwalt (oder die Patentanwälte) und/oder Patent Agenten, **Kundennummer 113**, mit der Abwicklung aller damit verbundenen Geschäfte vor dem Patent- und Warenzeichen: (Aktuellen Namen und aktuelle Registrationsnummer anführen,)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the attorney(s) and/or agent(s) of **Customer No. 113** to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (list current names and registration numbers).

B. Franklin Griffin, Jr. Reg. No. 19,334
F. Prince Butler, Reg. No. 25,666
Fred S. Whisenhunt, Reg. No. 24,378
Joerg-Uwe Szipl, Reg. No. 31,799
Richard Gallagher, Reg. No. 28,781

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(Name und Telefonnummer)

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(name and telephone number)
F. Prince Butler (703) 979-5700

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Customer No. 113, currently:

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Arlington, Virginia 22204

Voller Name des ersten Erfinders:

Full name of third [the opposite German text says "first"] inventor:

(9) Thomas KNEIDEL

(9)

Unterschrift des ersten Erfinders

Datum

Third [German text says "first"]
Inventor's Signature

Thomas Kneidel

4. Feb 2000

Wohnsitz

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DE X
Citizenship

Staatsangehörigkeit

German

Postanschrift

Post Office Address

same as above

Voller Name des zweiten Miterfinders
(falls zutreffend)

Full name of fourth [the opposite German text says "second"] joint inventor:

(9)

(9)

Unterschrift des zweiten Erfinders

Datum

Fourth [German text says "second"]
Inventor's Signature

Wohnsitz

Residence

Staatsangehörigkeit

Citizenship

Postanschrift

Post Office Address